Break the Messaging Silos with COI: Chat Over IMAP

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Open-Xchange
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Who has an active email account?
Please raise your hand
The Hot New Channel for Reaching Real People: Email

Frustrated by social media, businesses and others looking for an audience turn to an old standby

By Christopher Mims
Jan. 19, 2019 12:00 a.m. ET

Kids think it’s fussy and archaic, but for brands, creators and businesses of every kind the emerging medium of choice to reach audiences is the only guaranteed-delivery option the internet has left: email.

Consumer email services have been around for almost three decades, but to hear email’s most ardent fans talk about it now, it’s an undiscovered country too long neglected by those who could benefit from it the most. In the #deletefacebook era, it’s become a way to fight back against the algorithms that try to dictate what...
IMAP as a Chat Protocol

Seriously?

IMAP (and email, in general) is not designed for low latency, small data packet (chat-like) communication

There are protocols explicitly designed for chat. Why not use them?

BUT...
IMAP (Email) as a Chat Protocol

It’s the Network, baby

- Ubiquitous – 3.8 billion unique active users
- System fully operational today!
- Thousands+ of people working on infrastructure everyday
- Well-known; stable; extensible (Internet Message Access Protocol)
- Built-in Abuse/Security
  - Chat ID is not identifier, it’s your account
- Allow clients to innovate, instead of efforts/waiting for critical network mass
- (FWIW: COI does not require IMAP – can be adapted to use other MUA APIs in the future)
COI Now

Client COI

• Use existing IMAP & SMTP Infrastructure
• COI Client Specification v1.0 draft open for review
  wiki.coi-dev.org
Client Spec Design Considerations

Goal: Open Standards
- Use existing standards like
  - VCARD for contact information,
  - Disposition Notification Reports for read receipts
  - Attachments for structured JSON data

Goal: Backwards Compatibility
- Always have something to show
  - text/plain, or text/html, or binary part like image/jpeg
- Keep it simple for existing clients
  - Change group name in subject
  - Change group definition with “To” or “CC”

Goal: Secure Messaging
- Allow any encryption mechanism

Goal: Modern User Experience
- Block users
- Edit & delete sent messages
- Sync contacts across devices
1:1 Message

From: Me Myself <me@sample.com>
To: You <you@recipientdomain.com>
Subject: Chat 2019-02-03 11:05
Date: Sun, 3 Feb 2019 11:05:37 +0100
Content-Type: text/plain; charset=UTF-8
MIME-Version: 1.0
Disposition-Notification-To: Me Myself <me@sample.com>
Message-ID: <coi$S2571BC.2878&8@sample.com>
Chat-Version: 1.0

Hello World
Hi gang, hope you're doing fine!
Hey, this message is now edited!
Poor Man’s Address Book (1/2)

Cross Device Syncing

From: Simon Tester <simon@coi-dev.org>
To: alice@example.com
Subject: Chat: Contact
Date: Mon, 4 Dec 2019 15:51:37 +0100

This message contains a contact, do not delete.

BEGIN V CARD
VERSION:4.0
EMAIL;TYPE=work:stester@coi-dev.org
EMAIL;PREF=1:simon@coi.me
FN: Simon Tester
N: Tester; Simon;;;ing. jr, M.Sc.
BDAY: 0203
ANNIVERSARY: 20090808T1430
GENDER:M
LANG;PREF=1:fr
PHOTO: data:image/jpeg;base64,MIICajCCAdOgAwIBAgICBEUwDQYJKoZIhvcNAQEBojAwgGCSqGSIb3DQEB
...remainder of base64-encoded data...
END V CARD

Chat-Content: contact

{  
"coi-version": 1,  
"content": "contact",  
is_me": false,  
is_visible": true,  
"status": "idling around...",  
"groups": ["friends", "favorite"],  
"notification": {  
  "enabled": true,  
  "types": ["banner", "sound"],  
  "sound": "friend"  
}  

Content-Type: application/json; charset=UTF-8
Content-Disposition: attachment; filename="contact.json"

Chat-Content: contact

{  
"coi-version": 1,  
"content": "contact",  
is_me": false,  
is_visible": true,  
"status": "idling around...",  
"groups": ["friends", "favorite"],  
"notification": {  
  "enabled": true,  
  "types": ["banner", "sound"],  
  "sound": "friend"  
}  

Stay Open.

OX
Cross Device Syncing

From: Simon Tester <simon@coi-dev.org>
To: alice@example.com
Subject: Chat: Contact
Date: Mon, 4 Dec 2019 15:51:37 +0100
Message-ID: <coi$232888.2323@sample.com>
Chat-Version: 1.0

Chat-Version: 1
Chat: contact

Chat-Version: 1
Chat: contact

BEGIN:VCARD
VERSION:4.0
EMAIL;TYPE=work:stester@coi-dev.org
EMAIL;PREF=1:simon@coi.me
FN:Simon Tester
N:Tester;Simon;;;ing.jr,M.Sc.
BDAY:--0203
ANNIVERSARY:20090808T1430-0500
GENDER:M
LANG;PREF=1:fr
PHOTO:data:image/jpeg;base64,MIICajCCAdOgAwIBAgICBEUwDQYJKoZIhv
END:VCARD

BEGIN:VCARD
VERSION:4.0
EMAIL;TYPE=work:stester@coi-dev.org
EMAIL;PREF=1:simon@coi.me
FN:Simon Tester
N:Tester;Simon;;;ing.jr,M.Sc.
BDAY:--0203
ANNIVERSARY:20090808T1430-0500
GENDER:M
LANG;PREF=1:fr
PHOTO:data:image/jpeg;base64,MIICajCCAdOgAwIBAgICBEUwDQYJKoZIhv
END:VCARD
COI Soon

Server & Client COI

- Server differentiates between email and chat messages
- Server support for blocking users
- Push notifications
- Support for WebRTC audio and video-calls
- Create & manage channels
- Direct message submission
How can we Innovate?
Solve General Email Problems

Don’t focus just on project goals; think bigger!

- Problem: Email delivery can be high latency
- Idea: Develop secure way to decrease delivery times for trusted users
- Solution: Direct Message Submission
- NOT tied to COI – any email user can potentially benefit
NOW: Mail Delivery via “Magic Internet Routing”

- Local Submission
- Local Outbound
- Local AV/AS
- Fancy Expensive Cloud MTA Service
- Unstable, High Latency MTA
- Destination Inbound
- Destination AV/AS
- Destination Mailstore

Winning!
Soon: Submission Token

Distribution

Local Submission

Submission Token
Enabled MTA
(e.g. Dovecot)
Soon: Submission Token

Usage

- Transparent to end users
- Can be supported (unidirectionally) by client
- Mail API agnostic – this is SMTP extension, not IMAP

Local Submission

Submission Token Enabled MTA (e.g. Dovecot)
Back to the Present
OX Talk App
Mobile chat & mail

- MPL license
- Based on Flutter.io

- [github.com/open-xchange/ox-talk](http://github.com/open-xchange/ox-talk)
Partners

Establishing an ecosystem

**Delta Chat**
- Open source IMAP based messenger
- We cooperate on interoperability
- [https://delta.chat](https://delta.chat)

**Spike**
- Conversational email experience
- Will support COI in the future
- [https://www.spikenow.com/](https://www.spikenow.com/)

**Your Client or Your Email Server?!**
- Welcome aboard!

COI is an **open ecosystem**
## Why Should I Support / Use COI?

### For Developers
COI is the only ecosystem that provides openness, a strong messaging basis AND that overcomes the network effect.

**COI is a base to realize your own unique ideas.**

Thanks to Delta Chat Core, as a client developer you do not even need to deal with IMAP directly.

### For Privacy Advocates
Only open AND federated systems like COI provide you the freedom to select your preferred app and provider – or even let you host it yourself.

GPG encryption ensures pragmatic, cross device privacy.

### For End-Users
- Choice of multiple apps
- Central place for all messaging activity
- Trust
THE STORY OF A FISH, WHO WILL CHANGE THE WORLD OF CHAT.

Free COI

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wiki.coi-dev.org
github.com/open-xchange/ox-talk

Stay Open. OX